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Assignment 4 :- Cyber Security

Q.1 Why are digital Signature considered more secure than handwritten Signatures in legal and financial transaction?? Discuss how the use of digital Signatures in India has accelerated the adoption of digital governance.

Soln Digital Signature vis handwritten Signatures in Legal and Financial Transactions

(i) Security of Digital Signatures :-
Digital signatures are generally considered more secure than handwritten signatures because they utilize cryptographic algorithm such as Public key Infrastructure to ensure that the Signature is Uniquely tied to the Signer and the document.

(ii) Digital Signature
(i) Authenticate Identity :- They confirm the Signers identity through encryption keys which are difficult to forge.
(ii) Provide non-repudiation :- Once a document is digitally signed the Signer cannot deny their involvement in Signing the document.

(iii) Digital Signatures and Digital Governance in India
India has embraced digital Signature to modernize and simplify governance fostering the digital economy and encourage

Online transaction.

(iv) The Aadhar system (a biometric identification program) and efiling taxes benefit from digital signature to ensure the security and authentication transcation.

Q.2 How does CERT-In collaborate with International cybersecurity agencies 2) How does CERT-In's role extend beyond Incident response to include prodctive measures like vulnerability asses

Soln CERT-In's Collaboration with International Cybersecurity Agencies to Combat cyber threats and Improve cybersecurity

i) Interpol:- CERT-In works with Interpol to share Intelligence on emerging cyber threats and Improve Cybersecurity

ii) ITU (International Telecommunication Union):- CERT-In participates in global forums with ITU to establish cybersecurity Standards, best practices and responses to large scale cyber incident

iii) CERT-In's Role Beyond Incident

- Response-

while CERT-In is primarily focused on incident response, it also plays a proactive role in enhancing India's cybersecurity posture.

- Capacity building :- CERT-In works to enhance the cybersecurity knowledge and readiness of both public and private sector entities through training and awareness programm
- Vulnerability assessments - CERT-In conducts assessments to identify weakness in infrastructure and recommends mitigation strategies.

Q.3 With the rise of AI-driven attacks and quantum computing on the horizon, do you think current mechanism like firewalls and encryption will become obsolete?)

Soln Impact of AI and Quantum Computing on Cybersecurity

- As AI-driven attacks and quantum computing evolve, traditional security mechanisms, such as firewalls and encryption, face growing challenges.

— AI driven attacks :- AI can be used to automate and refine attacks making them faster, more targeted and harder to detect.